

REMARKS

Claim 16 has been rejected under 35 U.S.C. 112, second paragraph on the basis that the Examiner is unclear how the seal can have a stationary housing.

Claim 16 depends from claim 1 which recites that a mechanical seal for sealing between a rotatable shaft and a stationary housing. The seal is thus located between these two elements and claim 16 merely further defines the structure of the housing. In particular, claim 16 recites that the housing is provided with a radially extending hole connecting the outermost and innermost surfaces of the housing. In contrast to the Examiner's assertion, the combination of claims 1 and 16 does not recite that the seal has a stationary housing but recites that the seal is used with and provides a seal between the shaft and the housing.

Based on the foregoing, the rejection of claim 16 should be withdrawn.

Claims 1, 7, 16 and 37 stand rejected under 35 U.S.C. 102(b) as being anticipated by Whitford et al. (U.S. 5,064,205).

Claims 1, 5-7, 9, 11, 12, 16 and 37 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Laney (U.S. Patent No. 6,109,617) in view of Dawson et al. (U.S. 6,508,358).

Applicant respectfully traverses the present rejections based on the following comments.

With respect to the rejection of claim 1 as being anticipated by Whitford et al., Applicant respectfully points out to the Examiner that the Whitford et al. reference discloses a labyrinth seal and not a mechanical seal having a slide contact between the seal faces. The labyrinth seal merely provides a tortuous path between a rotary member, such as item 2, and a stationary arrangement (see items 3 and 4). The so called windings 5, 6, 7 and 8 are not seal face members but rather moveable elements within the stationary arrangement which can be used to vary the gap within the labyrinth fluid path. These windings 5, 6, 7 and 8 are spring biased towards the rotor ring 2. Currents passed

through the windings can be used to control the gap and hence the width of the fluid path at these positions.

Applicant respectfully submits that there is nothing in the Whitford et al. reference to suggest the use of magnets in sliding contact mechanical seals. Such seals traditionally make use of springs in order to load the spring faces together. Instead of adding magnets to such an arrangement, the present invention replaces the springs by magnets which are used to maintain effective sliding contact.

Accordingly, the nature of the seal, and the use of the magnets, is entirely different in the present invention compared with the disclosure that is set forth in the Whitford et al. reference.

Based on the foregoing, reconsideration and withdrawal of the rejection of claim 1 under the Whitford et al. reference is in order.

With respect to the rejection of claim 1 based on a combination of the Laney and Dawson references, Applicant respectfully traverses this ground of rejection based on the following comments.

Laney discloses a gas seal in which stationary seal face members are spring urged towards opposite seal faces of a rotary seal face member. Replacing the springs of Laney by the magnets of Dawson would achieve a situation in which each stationary seal face is magnetically repelled by a magnet, positioned where a spring is positioned in Laney, toward the stationary seal face member. In other words, there will be two magnets, or two sets of magnets, each repelling one stationary seal face member. Such an arrangement would be axially quite a bulky one, as in the case of Laney.

Applicant has amended claim 1 to further clarify the present invention. In particular, claim 1 has been amended to include the following feature “wherein said magnetically biasing means comprises one or more magnets each of which is positioned so as to attract both said axially

floating stationary seal face members and so as to urge said stationary seal face members towards said rotary seal face member.”

Since this feature is not disclosed and for that matter is not suggested in the Laney prior art reference, the rejection of claim 1 should be withdrawn.

Claims 5-7, 9, 11, 12, 16 and 37 should be allowed as depending from what should be an allowed independent claim 1, as amended.

New claim 37 depends from amended claim 1 and therefore should be allowed and in addition, this claim recites a feature neither disclosed nor suggested by the cited references. As will be appreciated from the drawings in the present application, the resulting arrangement is an axially compact one compared to that of Laney.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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